MULTIMEDIA UNIVERSITY®

STUDENT ID NO | | | | | | | | | | |

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

MVR1023 – SIMULATION MODELLING 1

(All sections / Groups)

24 OCTOBER 2019
9.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTION TO THE STUDENT

1. This Question paper consists of 6 pages including cover page with 10 questions in Section A and 4 questions in Section B. Total marks is 40.

2. Answer **ALL 10 questions in Section A.** Each question carries 1 mark.

3. Answer ONLY **3 out of 4 questions in Section B** and the distribution of the marks is as stated.

4. Please write all your answers in the answer booklet provided

SECTION A | Answer ALL
Total marks are 10

1. X, Y & Z axis is the coordinate system represent red, blue and green arrows in the viewport, but different application represents different axis. Which application uses the same axis orientation similar to the reference in Figure 1 below?

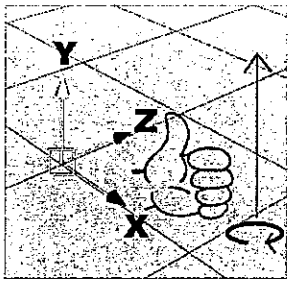

Figure 1

   A. 3DS Max
   B. Unity 3D
   C. Unreal engine
   D. SketchUP

2. Which of the following is the best texture size to work on games or VR application?

   A. 128px x 521px
   B. 265px x 265px
   C. 512px x 512px
   D. 1024px x 2410px

3. The scale of 1cm:1m in scale drawing is refers to
   A. 2 mm on the drawing is equal to 1 m on the actual object
   B. 1 cm on the drawing is equal to 100 cm on the actual object
   C. 0.1 m on the actual object is equal to 1m on the drawing
   D. 1 m on the drawing is equal to 1cm on the actual object

4. In 3D modelling, poly distribution is an important factor to optimise your model. These are the elements to consider for optimization EXCEPT:
   1. To consider things in order of size.
   2. To consider the size you need to model
   3. Look for the larger elements of the subject and prioritize those.
   4. No point working on small details unless the major elements can be accounted for.

Continued...

5. The image 2 below shows another factor to decide on the polygon spend. What is that factor?

Image 2

A. Coloured or black and white space
B. Positive and negative polygon
C. Silhouette
D. Natural or man-made material.

6. Why do you think it's good to use polys to enhance the richness or interest of the negative space?
   A. It makes the asset more interesting and the polys have more impact in game.
   B. It makes the asset faster to render and less computing power to use.
   C. It makes the asset more artificial looks and stylish.
   D. None of the above.

7. The door of a house is normally recessed slightly. How would you model the door with the consideration of polygon count?
   A. It could be textured in place just as effectively.
   B. It need to model every single detail of it.
   C. It should be model with smooth polygon.
   D. Model the door in front of the wall.

8. You can achieve the details of the bevelled edge of a 3D object without adding extra polygon by...
   A. using chamfer edge technique.
   B. using UVW mapping technique.
   C. using edit edge of the object.
   D. using normal and specular mapping technique

Continued..

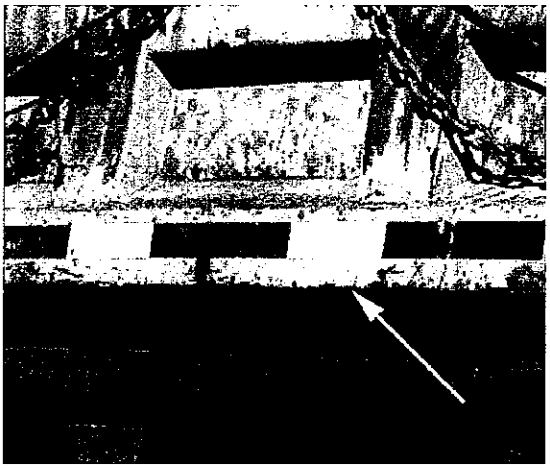

Image 3

9. Referring to image 3 above, what should you observe on a real-life object when working on the "edge detailing" of a 3D model?
    A. Edges of objects in real life tend to show different characteristics to other parts of the surface.
    B. Edges of object in real live are very sharp and shiny.
    C. Edges of object in real life adapts the texture resolution based on the distance.
    D. None of the above.

10. What are UV's?
    A. Various types of projections to map the texture in the 3d object
    B. A 3d space in 3d model to map the texture
    C. A texture that will be assigned to the 3d object in 3d software
    D. Coordinates to place the texture in 3D space by taking each point of the model (vertex) and assigning it to a point on the map.

Continued..

SECTION B

Answer only THREE (3) questions out of four. Each question carries TEN (10) marks.

Question 1

a. Define what is normal map? Explain how normal map works? (You may use sketches to support you answer)

[4 marks]

b. Explain step by step the process to create the bump map effect on the surface of wooden door in Photoshop and 3D Max. You can sketch the answer to support your explanation.

[6 marks]

Question 2

a. List 4 out of 12 Principle of Animation by Frank Thomas & Ollie Johnston

[4 marks]

b. Imagine a boy as a game character with curly hair, and he is holding a ball at his hand. He is about to throw the ball to a friend. Briefly describe and sketch the situation by using 3 of the principle of animations which will be applied during the action. [6 marks]

Question 3

a. In real life, when two or more elements of an object join together, something will happen at the join.
What are the elements you will find based on the image 4 below? [4 marks]

Image 4

Continued..

b. As a game artist when you want to create a game asset, for example a fire hydrant, what are the artistic consideration in texturing which helps in enhancing the visual re-presentation and give characteristic to the game asset? Support each answer with example. [6 marks]

Question 4

In creating a game asset based on the reference photograph, you may encounter with problems such as incomplete reference photos or the object is hidden and you are unable to view the other side of the object.

a. What are the similar elements you can use to complete the hidden asset? [4 marks]

b. Describe how "a child asset" technique is used to overcome the hidden assets and give example. [6 marks]

End of Paper